Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Sukhendu K. Majumdar

GENERAL INFORMATION:

Name:	Degussa Corporation.
Address:	5150 Gilbertsville, Calvert City KENTUCKY
Date application received:	August 25, 2004
SIC/Source description:	2819 Industrial Inorganic, Catalyst Manufacturing.
Source ID #:	21-157-00036
Source A.I. #:	2931
Activity #:	APE20040001
Permit number:	V-06-027

APPLICATION TYPE/PERMIT ACTIVITY:

[X] Initial issuance
[ ] Permit modification
__Administrative
__Minor
__Significant
[ ] Permit renewal

[ ] General permit
[ ]Conditional major
[X] Title V
[X] Synthetic minor
[ ] Operating
[ ] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[ ] Compliance schedule included
[ ] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[ ] PSD
[ ] Netted out of PSD/NSR
[ ] NSPS
[ ] NESHAPS
[ ] Not major modification per 401 KAR 51:001, 1(116)(b)
[X] SIP
[ ] Other

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[X] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[X] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	2004 Actual (tpy)	Potential (tpy)
PM/PM_{10}	4.3/4.3	28.11/28.11
SO_2	0.014	0.06
NOx	15.2	83.8
CO	0.49	8.04
VOC	2.76	20.26
Single HAPs> 10 tons	None	None
Source wide HAPs> 25 tons	None	None

SOURCE DESCRIPTION:

Pursuant to 401 KAR 52:020 Section 4, Degussa Corporation, submitted an initial Title V permit application to the Division for Air Quality on December 14, 1998. On January 16, 2004, the Permit Review Branch of the Division for Air Quality submitted a letter of deficiency to the source for the Title V application. The response to the deficiency letter came to the Division partly on March 22, 2004 and partly on April 12, 2004. A minor off permit change application was received by the Division on October 10, 2005 for an increase in the production rate of the Hydro De-Sulfurization (HDS) process. The proposed increase in production rate to a level of 19.2 tons per day, up from permitted capacity of 17.3 tons per day. The change in the production rate for the HDS process has been included in the permit. The source is presently operating under five expired operating permits for the five processes which were issued between 1994 and 1998.

Degussa Corporation manufactures a variety of catalyst for the chemical industries. There are five different catalyst manufacturing processes in the facility. These are:

1. HDS and Other fixed bed catalyst, Emission Unit #1
2. Vinyl Acetate Monomer (VAM) Series Catalyst: Emission Unit #2.
3. Bead Process: Emission Unit #3.
4. Precious Metal Catalyst (PMC) Process: Emission Unit #4.
5. Butane Diol (GEMX) Process: Emission Unit #5.
6. Calciners: Emission Unit #6
7. Belt and Vibrating Dryers: Emission Unit #7

Raw materials used to manufacture catalyst are: alumina, metal oxides, substrate and rare earth or precious metals. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine, potassium carbonate and a few others in small quantities. The process equipment consists of calciner, impregnator, dryers and reactors. The catalysts manufacturing in the facility is a combination of batch and continuous processes and some of the equipment are common between the five catalyst manufacturing processes.

The facility has seven (7) emission units and seven (7) emission points. Bag houses, fabric filters and wet scrubbers are used to recover the precious metals and to reduce particulate matter emissions. The facility uses 85% efficient scrubbers (AT1072, AT1074, AT1075) common to HDS, VAM and Bead processes to reduce NOx emissions. The GEMX process has separate scrubbers (2080) for NOx emission reduction.

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

The total emission of NOx from Precious Metal Vacuum Receiver (2014, 2024), Mix Tank 2 and 3 (2010 and 2020) and Blender Dryer (2030) shall not exceed 37.3 tons per year [Ref. Permit # F-98-025] in order to preclude applicability of 401 KAR 51:017 for the GEMX process.

OPERATIONAL FLEXIBILITY:

None.